

US EPA ARCHIVE DOCUMENT

The Brave New 'Digital' World of Area Planning



EPA tools and resources

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Planning Defined:

- Four letter word
- Door-stop
- "No one uses it..."
- Unfunded Mandate
- There are those who do and those who plan
- The Meek will inherit the Earth!

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Yesterday's Broken Promises of Technology



- Software and hardware too costly
- Accurate Data Difficult to obtain
- Advanced Training required
- Data limited to in-house
- Except for "The Jetsons!"

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Today's Technology Delivers!



- Increased software options available
- Compact and inexpensive data acquisition
- Easy to use interfaces
- Systems are portable and flexible – network interface
- Products more complex
- Web Accessible (ArcIMS, Google Maps, Google Earth, Open Source WebGIS)

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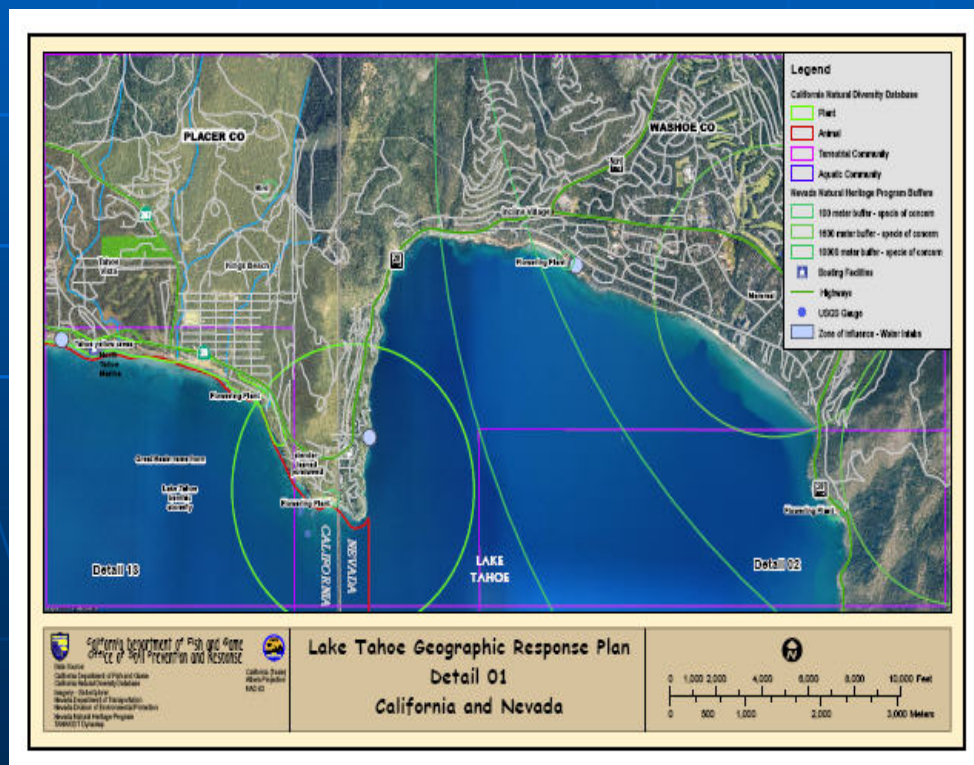


- Public Policy is being shaped by the availability of high-quality geospatial data.
- This increased emphasis is driving our need for multi-agency coordination, collaboration and an enterprise approach to GIS data management.

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AREA PLANNING = RESPONSE SUPPORT



- EPA is transforming the way data and imagery are incorporated into Area Plans
- This includes tools and applications to collect, publish and share information with responders and stakeholders.

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Value of an Area Contingency Plan is largely based on the questions it answers...



- Hazards in the Area?
 - Facilities
 - Transportation
- Worse-case discharge?
- All Hazards?
- Vulnerabilities/ Natural Resources in the Area?
- What do you want to protect?
- How do you want to protect it?
- Who will respond..?
- With what resources?
- Stakeholders?
- Who needs to be Notified, by whom?

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Digital Approach to Area Planning

- What-if scenarios more easily created and visualized
- More potential outcomes are explored
- Plan morphs into a response decision support tool

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Information flows more easily into the response

- Supports more informed and timely decisions
- Greater detail, customization and specificity are possible

Walker River Geographic Response Plan
May 2005 - Draft
River Response Site Strategies (Blue Tab)



Site: West Walker River Site # WW12 - Topaz Lake Canal
(Photo taken from outflow pipe, looking downstream)

Site Rank: B

Sensitive Site: No

Directions to Site: From Minden/Gardnerville, take Highway 395 south to Topaz Lake. Just north of the Topaz Lodge, turn east onto Topaz Park Road. Go 1.8 miles to the Topaz Lake County Park entrance. Continue 0.3 miles past the park entrance to a cement gate house. Past this gate house (0.1 miles) is a canal into which water from the Topaz Lake dam by-pass (underground pipeline) is received. This location is in Nevada.

Stream Width: 50 ft.

Boom Required: 200 ft. (minimum)

Site Strategy: There are multiple locations along the canal which could be used as booming locations. The canal runs very straight; however the banks are near vertical and unstable, which would complicate booming activities. The side-walls along the canal are up to 20 feet high.

Comments: By-pass water from the Topaz Lake flows into a submerged drain, through an underground pipeline and empties into the Topaz Lake Canal, which essentially becomes a tributary to the West Walker River. There is a dirt road which follows the north side of canal for 1.5 miles. There are multiple locations along this canal which could be used as boom sites in the event that spill material was sucked into the Topaz Lake submerged drain (depending on the water level this drain may only draw from the bottom of the lake, or may form a toilet bowl effect and draw from the top of the lake).

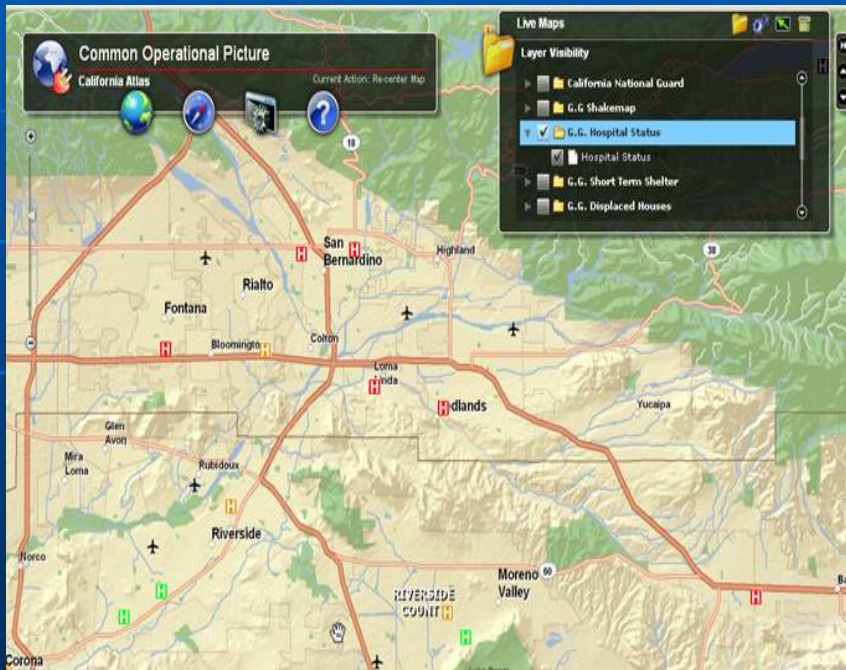
USGS 7.5 min Quad: Topaz Lake

Coordinates: N 39 41.703 W 119 30.558

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Geodatabase Emergency Response Support:



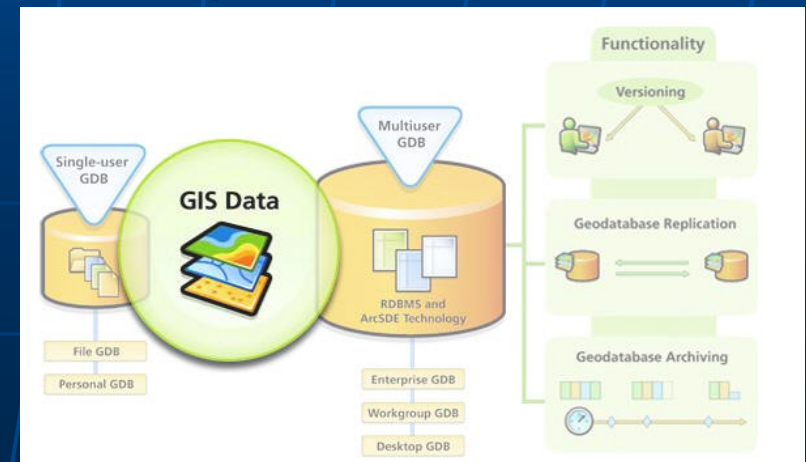
A GIS-based common operating picture provides continuous data updates.

In this SoCal exercise, understanding hospital occupancy levels helps officials direct emergency medical service crews transporting new patients.

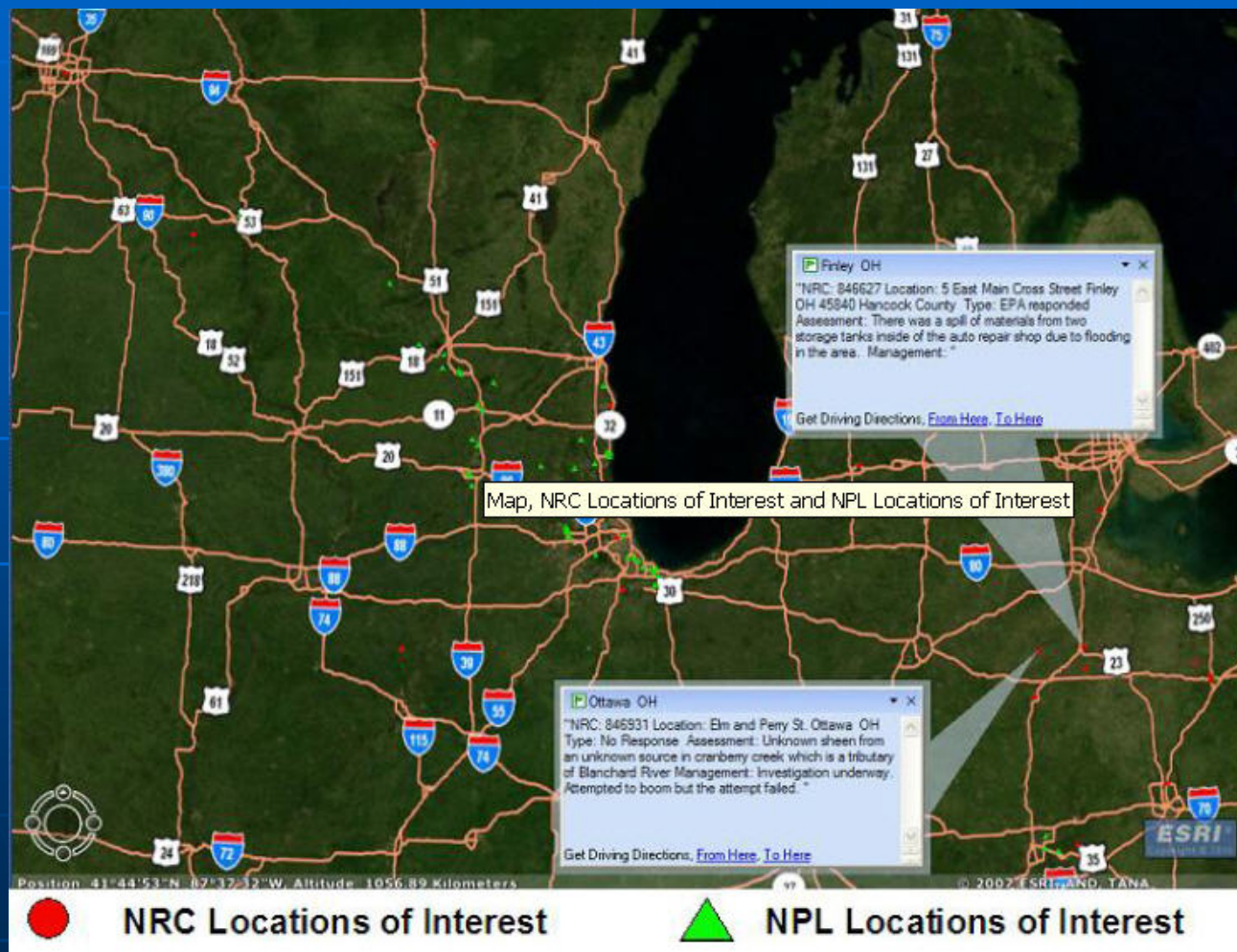


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- The Geodatabase – A Comprehensive Approach to Modeling and Managing Spatial Data
 - Container of spatial and attribute data
 - Enables users to store many different types of GIS data, from satellite and aerial imagery to modeling data
- Multi-user
 - Enterprise Geodatabase: large-scale ARCGIS Server Enterprise
 - Workgroup Geodatabase: small-medium ARCGIS Server WG
 - Desktop Geodatabase: small teams or single user
- Single-user
 - File Geodatabase
 - MS Access personal geodatabase

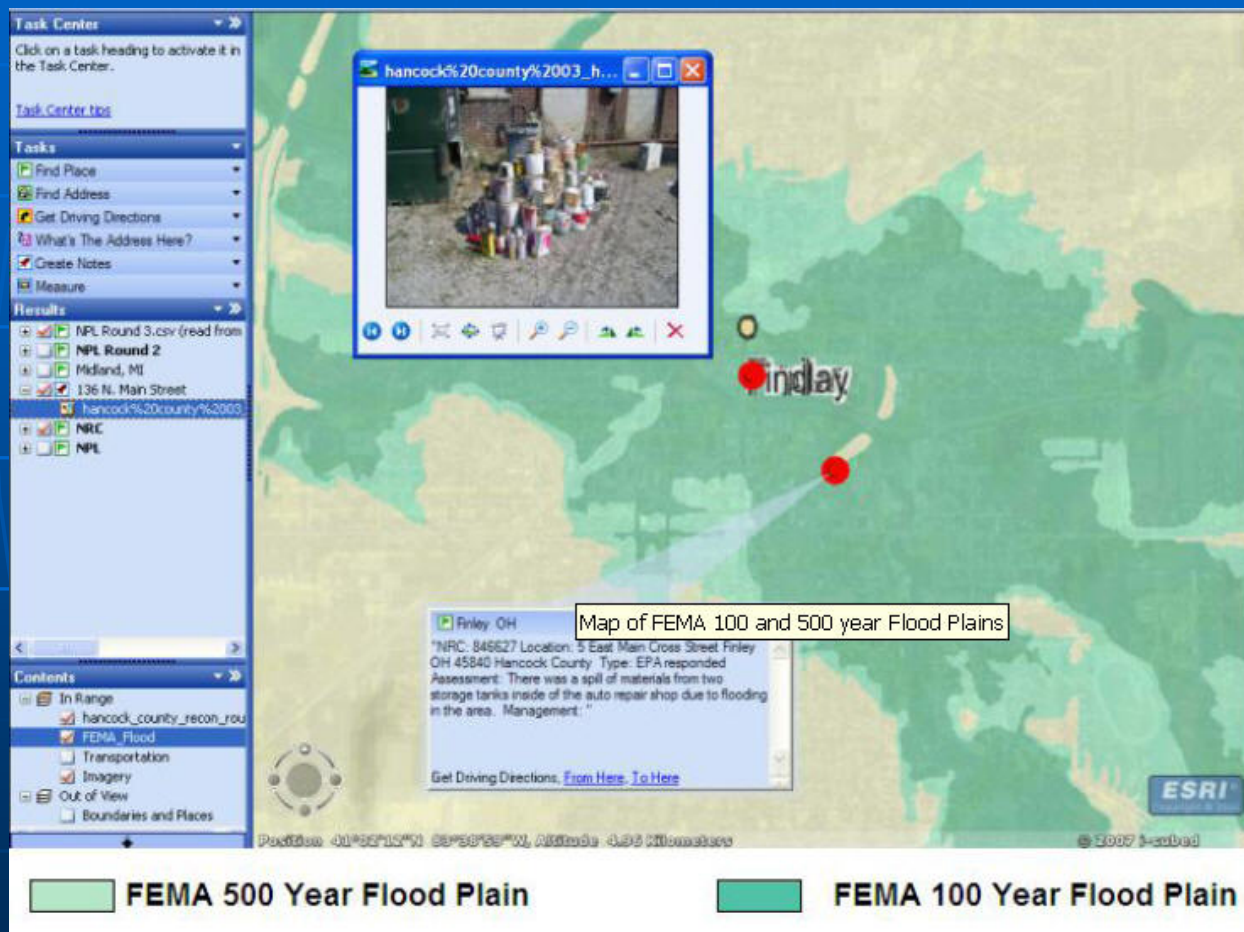


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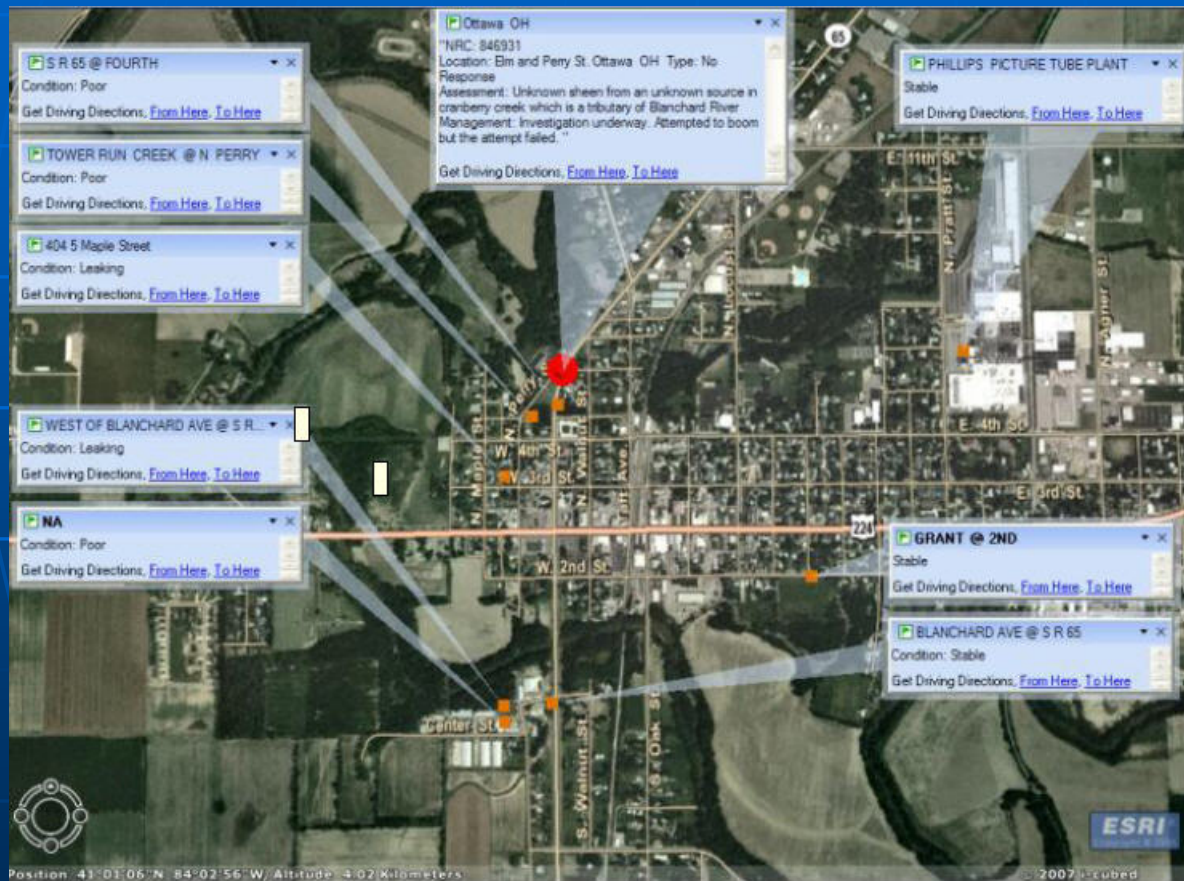
- Midwest Floods...
- Pull-up real-time attribute data on locations of interest

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- Overlay FEMA 100 and 500 year Flood Plains
- Pull-up real-time photos of impacts and response progress

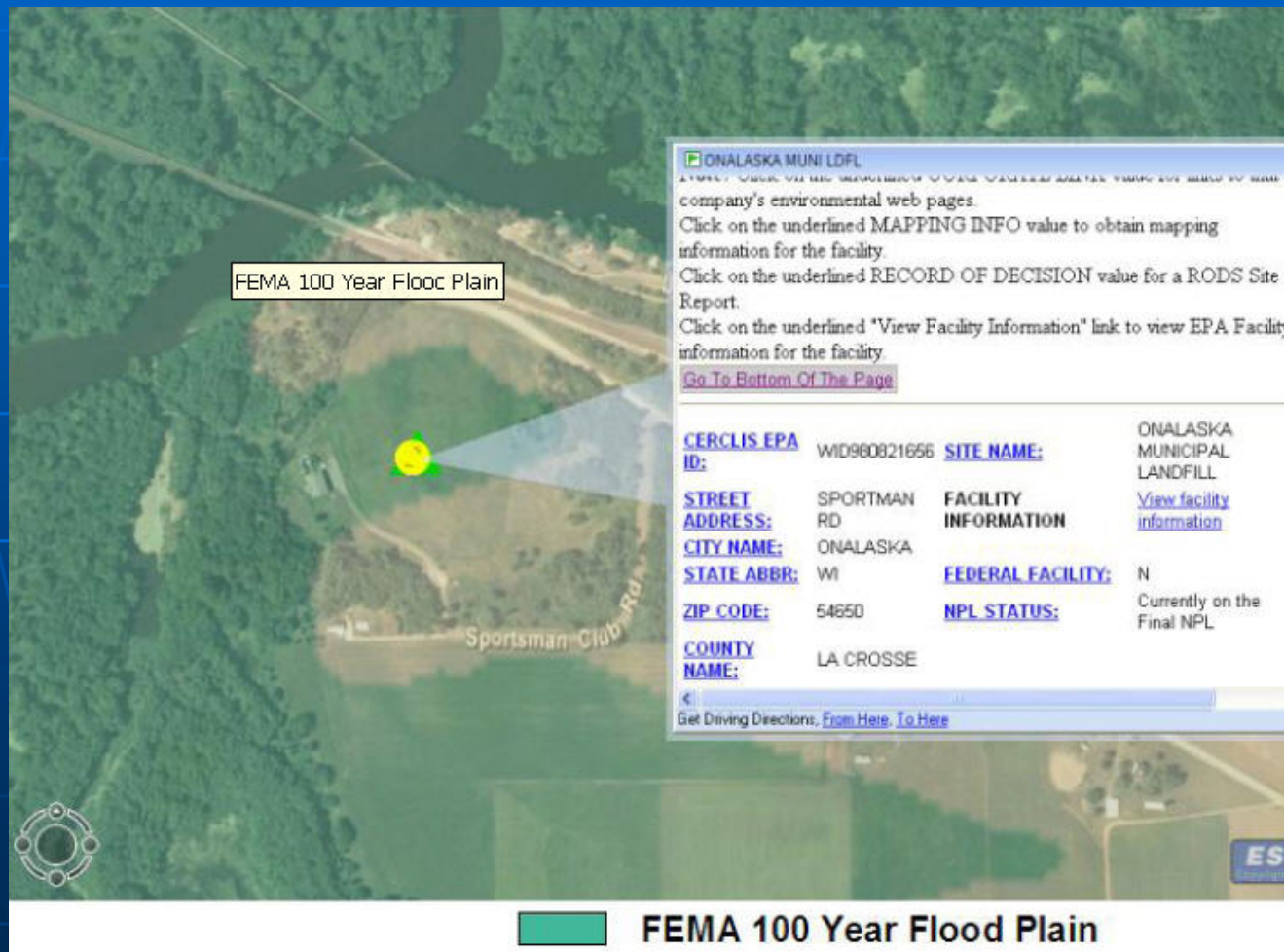
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- Facility attribute data at your fingertips..

For planning recon, hazard assessment or observing results of recon missions

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- Any attribute data or layers desired are possible.. If you are willing to collect it, create it, find it, share it, buy it, etc.

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Data Collaboration Considerations

1. Data Collection & Data Quality Improvement

- ☐ Standards
- ☐ Completeness
- ☐ Accuracy

2. Data Discovery and Use

- ☐ Availability
- ☐ Accessibility

3. Data Integration

- ☐ Data layering & display applications
- ☐ Data analysis & modeling applications

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Data Collaboration Considerations Applied

1. Data Collection & Data Quality Improvement

- a. R5 SONS 07 Lessons Learned
- b. Incident / Remediation Tracking (CERCLIS-epaosc.net)
- c. Landfill Data
- d. 2002 - 2007 Ohio River Outfall Survey

2. Data Discovery and Use

- a. Leverage Exchange Network (HERE, HLS)
- b. Emergency Response Web Sites (WebEOC, Geospatial Data Gateway)

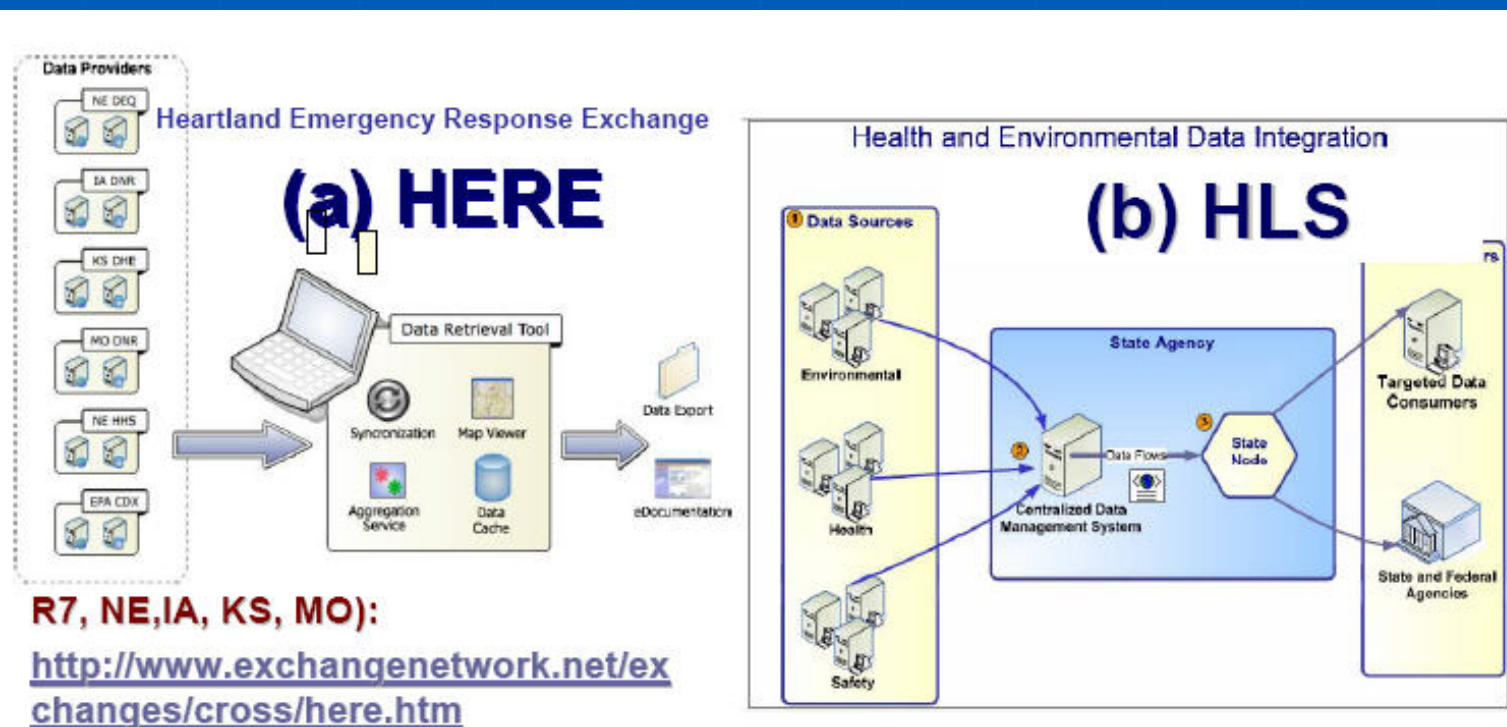
3. Data Integration

- a. Layering & Display Tools (ISA, ER Analyzer, ArcGIS Explorer)
- b. Data Analysis & Modeling Tools (FIELDS, RATS, NEPAassist)

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Data Collaboration Applied



R7, NE, IA, KS, MO):

<http://www.exchangenetwork.net/exchanges/cross/here.htm>

R1, R2, R5 Homeland Security (MI, ME, NH, NJ):

<http://statesdx.net/homelandsecurity/pages/public/background.htm>

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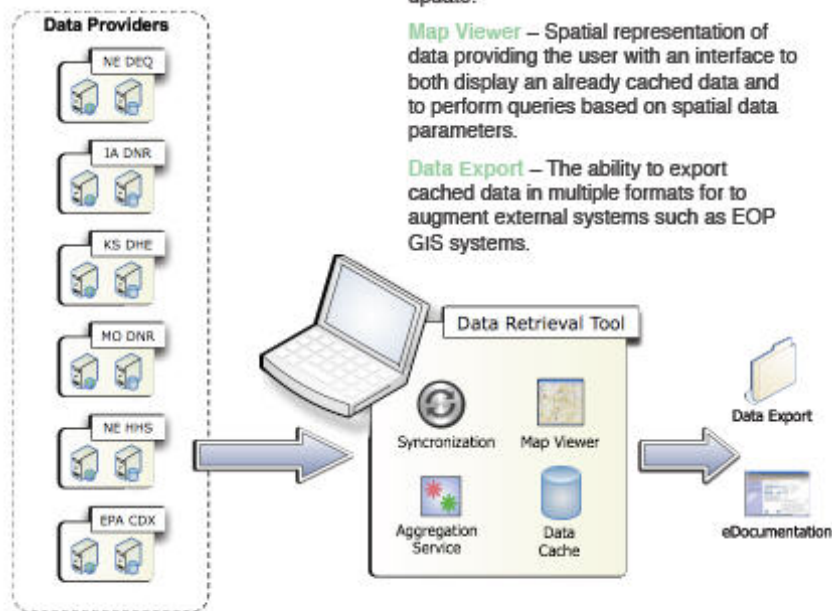
Data Sharing Lessons Learned

- ▶ Information is the major asset for decision making
- ▶ Communications and Partnerships
- ▶ Effective & efficient data sharing depends on:
 - ✓ Overall organization support and momentum
 - ✓ Information infrastructure that is tied to organization goals, objectives & measures
 - ✓ Developing useful, understandable, and comprehensive data standards, data documentation, and data content quality that can be integrated into multiple program data
 - ✓ Clear policies & guidelines on appropriate security & confidentiality

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HERE Smart Client Conceptual Design



Aggregation Service – Combines data results from multiple sources into a single merged data view, which subsequently is used for queries, spatial views, maps, reports and documents.

Offline Data Cache – A locally cached replica of aggregated data to support off-line use.

eDocumentation – Aggregated data presented to the user in a form of report augmented with other available contextual information.

Synchronization Engine – Responsible for keeping up-to-date the locally cached data. This process is performed through reconciliation and incremental data update.

Map Viewer – Spatial representation of data providing the user with an interface to both display an already cached data and to perform queries based on spatial data parameters.

Data Export – The ability to export cached data in multiple formats for to augment external systems such as EOP GIS systems.

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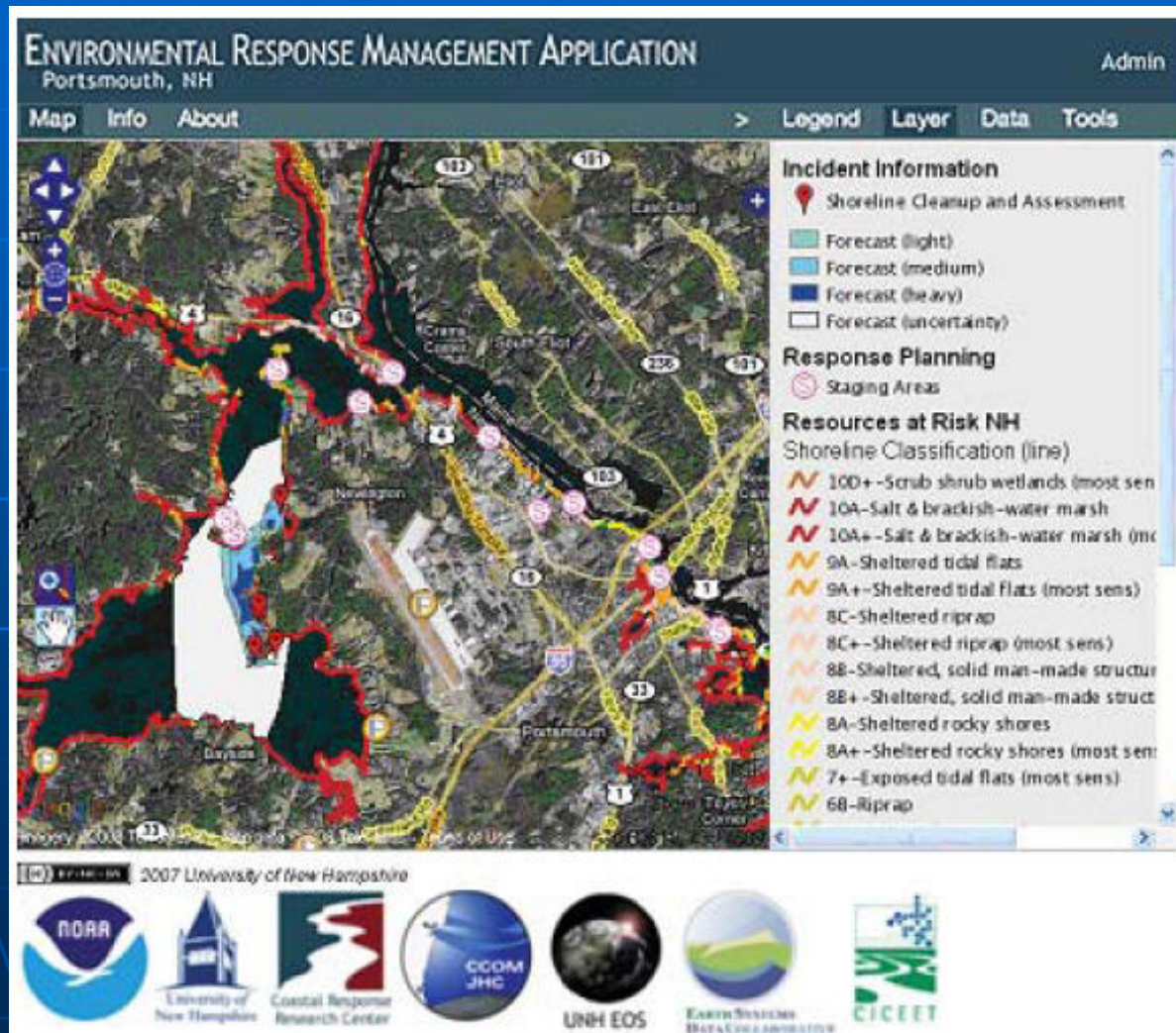
Heartland Emergency Response Exchange

In 1993, the Missouri River was in danger of flooding industrial sites on both sides of Kansas City. Emergency responders on both sides were aware of environmental concerns in their respective states. However, they were not aware of the facilities across the river, and consequently what environmental dangers these sites might represent.

Soon, thanks to joint cooperation at the state level from Iowa, Kansas, Missouri and Nebraska the HERE project will allow emergency responders from these states to have the necessary information to support their decisions during such environmental events.

Fact Sheet

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ERMA

Example output from the web-based GIS platform developed for ERMA™ representing a hypothetical spill response situation.

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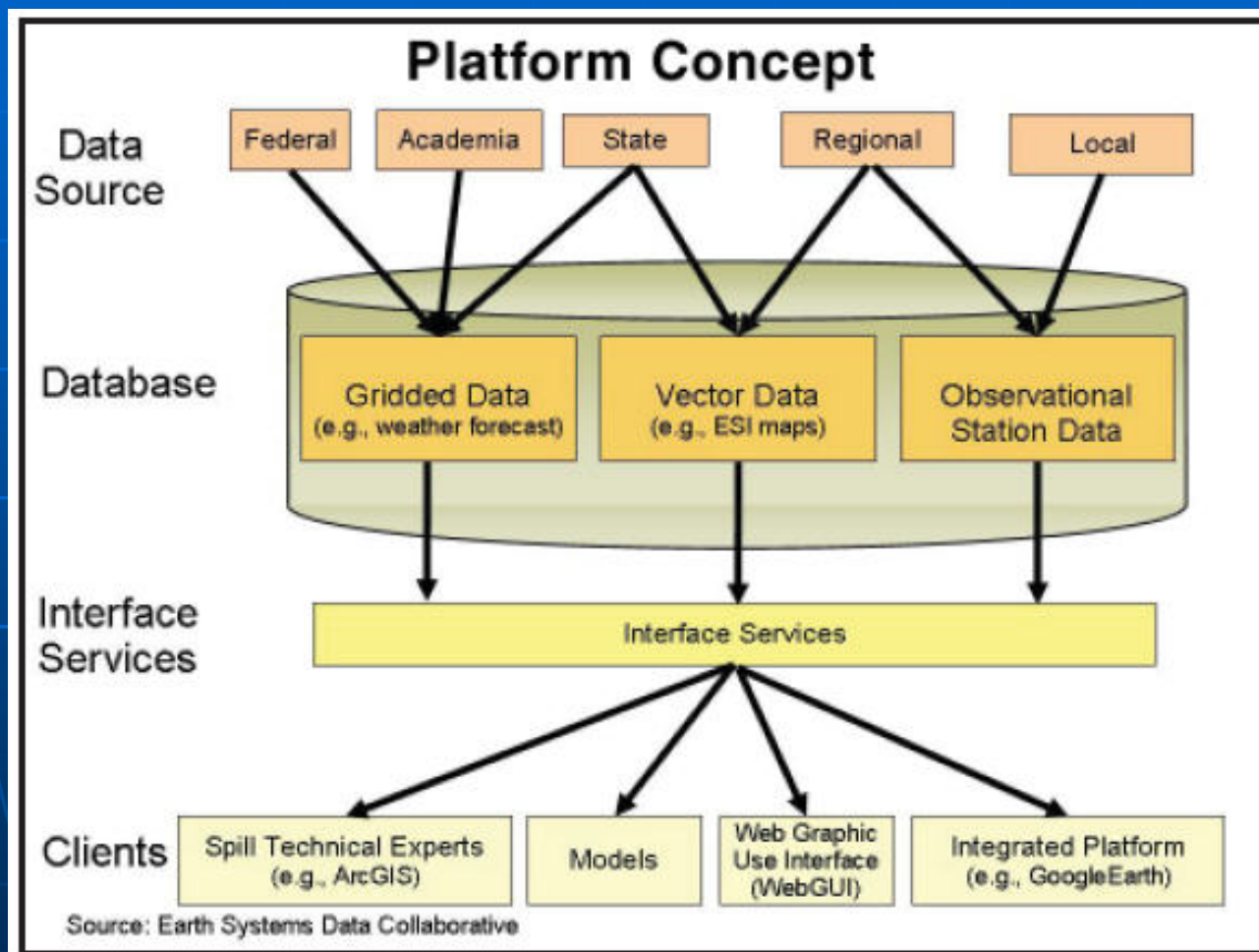


Illustration of the data platform concept on which the ERMA™ prototype was developed.

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EPA Response Manager, Version 4.0.3078.37930

EPA Response Manager > General

Modules: General, Response, Reconnaissance, Facilities, Shipping, Containers, Properties, Materials, Daily Reports, HHV, Calls, Contacts

Event: Action: [Dropdown] Go

Event Name	Region	Date Created	Coordinator Email	Description
Altoona Oil Spill	06		dabernath@epa.gov	CALLER STAT...
Altoona Mine	00	07/10/2008	NA	Altoona Mine R...
April 16 Train	00		NA	
Aurora Cyanide Drum	06		dabernath@epa.gov	City officials sta...
Arkansas Municipal Wa...	06	05/02/2008	Foster,Althea@epa...	
Arkansas Plating Fire	06	05/22/2008	dabernath@epa.gov	Abandoned Fac...
BIO-TEX GRAIN REMO...	06	11/09/2008	Delgado,Eric@epa...	Conducting asb...
Brazoria County Illegal...	06		Martin,John@epa...	NRC REPORT...
Calumet Refinery Fire	06		Engblom,Rita@epa...	
Clute Texas Mercury Re...	06	07/09/2008	dabernath@epa.gov	On 28 June 20...
Copper Clinic Mercury...	06	07/30/2008	dabernath@epa.gov	Mercury cleanup...
CPS Energy Bio-Tex EC...	06	08/22/2008	Delgado,Eric@epa...	Utilizing a chain...
CWTech	06		dabernath@epa.gov	
Deltek Refinery Fire	06		NA	Refinery Fire in...
Delahia Street Drum	06		Delgado,Eric@epa...	On 03/05/2009...
Denton County Transp...	06	08/19/2008	dabernath@epa.gov	Approximately...
Dumfriess Station	06		Engblom,Rita@epa...	
Dynalene Train	06		NA	This is the assi...
Earth Biofuel Plant	06	08/22/2008	dabernath@epa.gov	Earth Biofuel Pl...
El Paso Contractor Over...	06		Rinehart,Jon@epa...	
El Paso County Metals...	06		Rinehart,Jon@epa...	Soil sampling to...
Eldridge Avenue Lead S...	06		dabernath@epa.gov	The yard of a pt...
Frasman Food Services	06	08/14/2008	Martin,John@epa...	At approximatel...
Gold Metal Recycle Fire	06		Brescia,Nicolas@e...	3 Alarm scrap...
Helena Chemical Phars...	06	02/13/2008	Fife,Oreg@epa.gov	Demolition of o...
Hunt Oil Company Tank	06		NA	75 bbl oil spill fr...
Hurricane Outflow	06	08/29/2008	Delgado,Eric@epa...	Hurricane Outflow
Hurricane Ike - LA	06		dabernath@epa.gov	Hurricane Ike L...

Today is: 4/28/2009 Current User: Robberson, Bill (EPA 6, 5, 9)

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Area Contingency Planning GIS Login

User Name:

robberson.bill

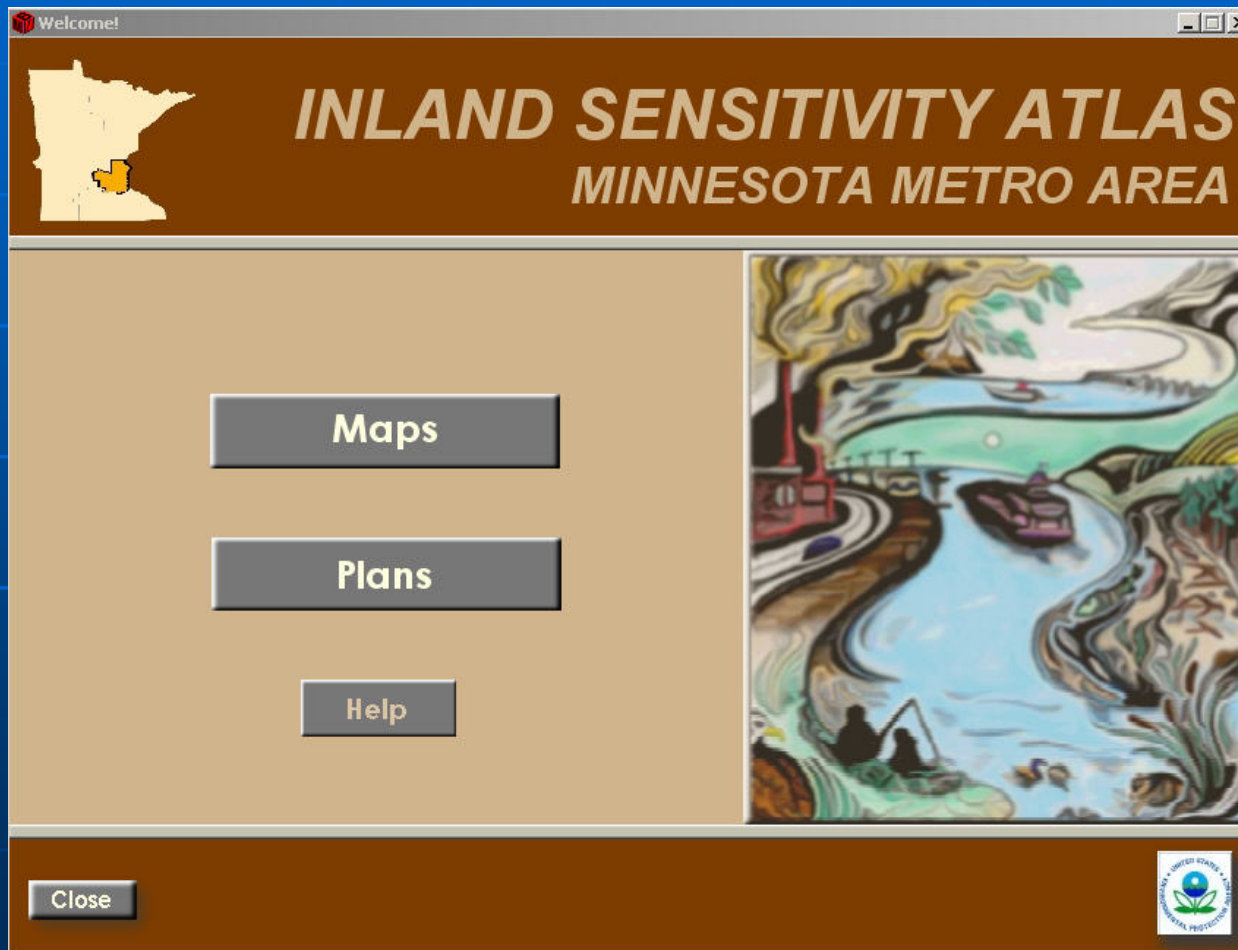
Password:

●●●●●●

Log In

Response
Manager

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Area
Plans in
Geopdf

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EPA Response Management and Area Planning

Area Plans in Geopdf

Welcome!



INLAND SENSITIVITY ATLAS MINNESOTA METRO AREA

EPA Region 5 ICP	EPA Region 5 Integrated Contingency Plan: This plan combines the response authorities relevant for both oil and hazardous materials. Although these releases and the related contingency planning are regulated separately there is significant overlap in the type and scope of relevant information. This plan in conjunction with the NCP, is adequate to remove a worst case discharge from a vessel or facility operating in or near the Area.
Minn./St. Paul Sub-Area	Minneapolis/St. Paul Sub-Area Contingency Plan: This Sub-area Contingency Plan (Sub-ACP) helps to coordinate timely and effective responses to minimize damage resulting from releases of oil or hazardous materials in the Minneapolis/St. Paul Sub-Area
Upper Mississippi River	Upper Mississippi River Spill Response Plan and Resource Manual: Plan addresses unique circumstances in coordinating spill response on the Mississippi River, and includes Resource Manual reference information.
UMR Emergency Action Field Guide	Upper Mississippi River Emergency Action Field Guide: One two-sided handout suitable for laminating how to report a spill on Upper Mississippi River and summarizes UMR Spill Plan

PLANS

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Welcome!



INLAND SENSITIVITY ATLAS MINNESOTA METRO AREA

Maps	Choose the tile you want and click on the map
Legend	View the key to map symbols
Data Tables	List of all features shown in map (also linked from maps)
Index	List of all features shown alphabetically within category
Sensitive Species Tables	List showing category and status of sensitive species
Access GIS Data	Opens Windows Explorer to GIS Data Directory, includes Metadata information
Data Disclaimer	Limitations on reliability of the data

MAPS

Back Help Plans



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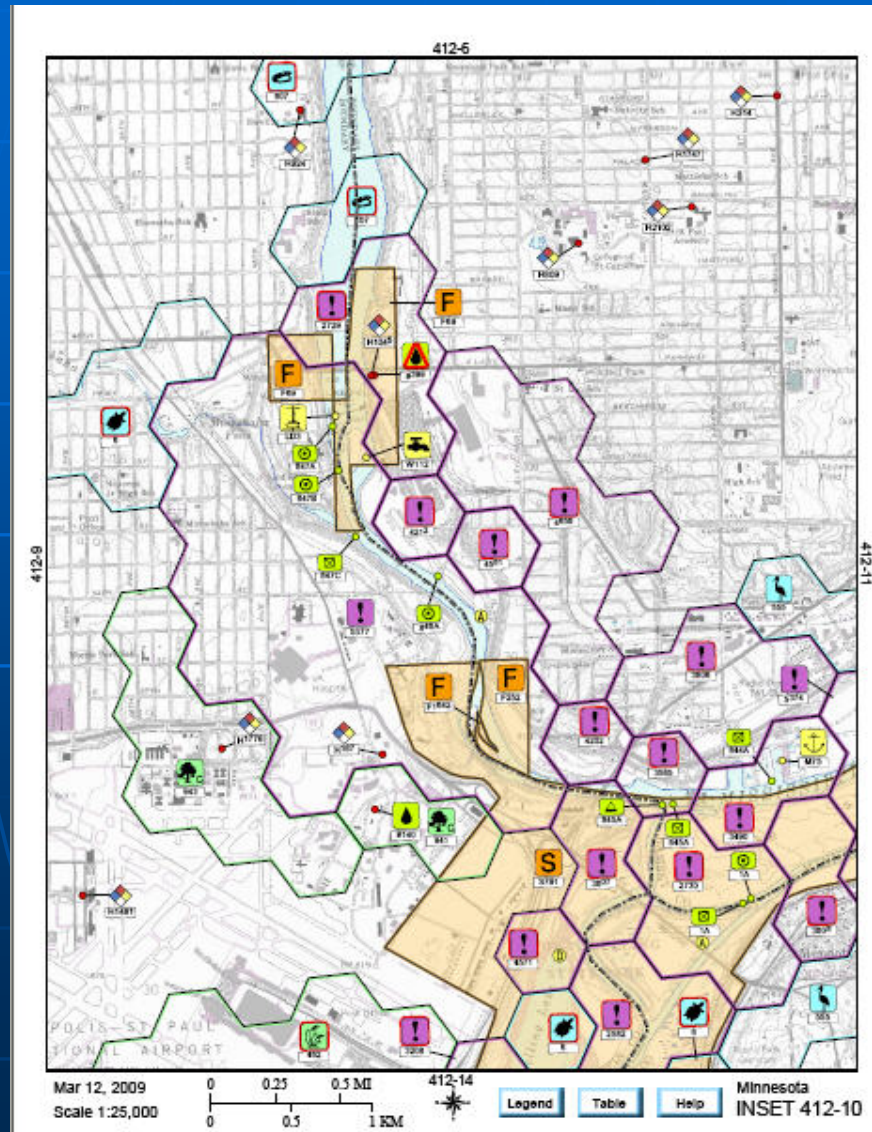
Area
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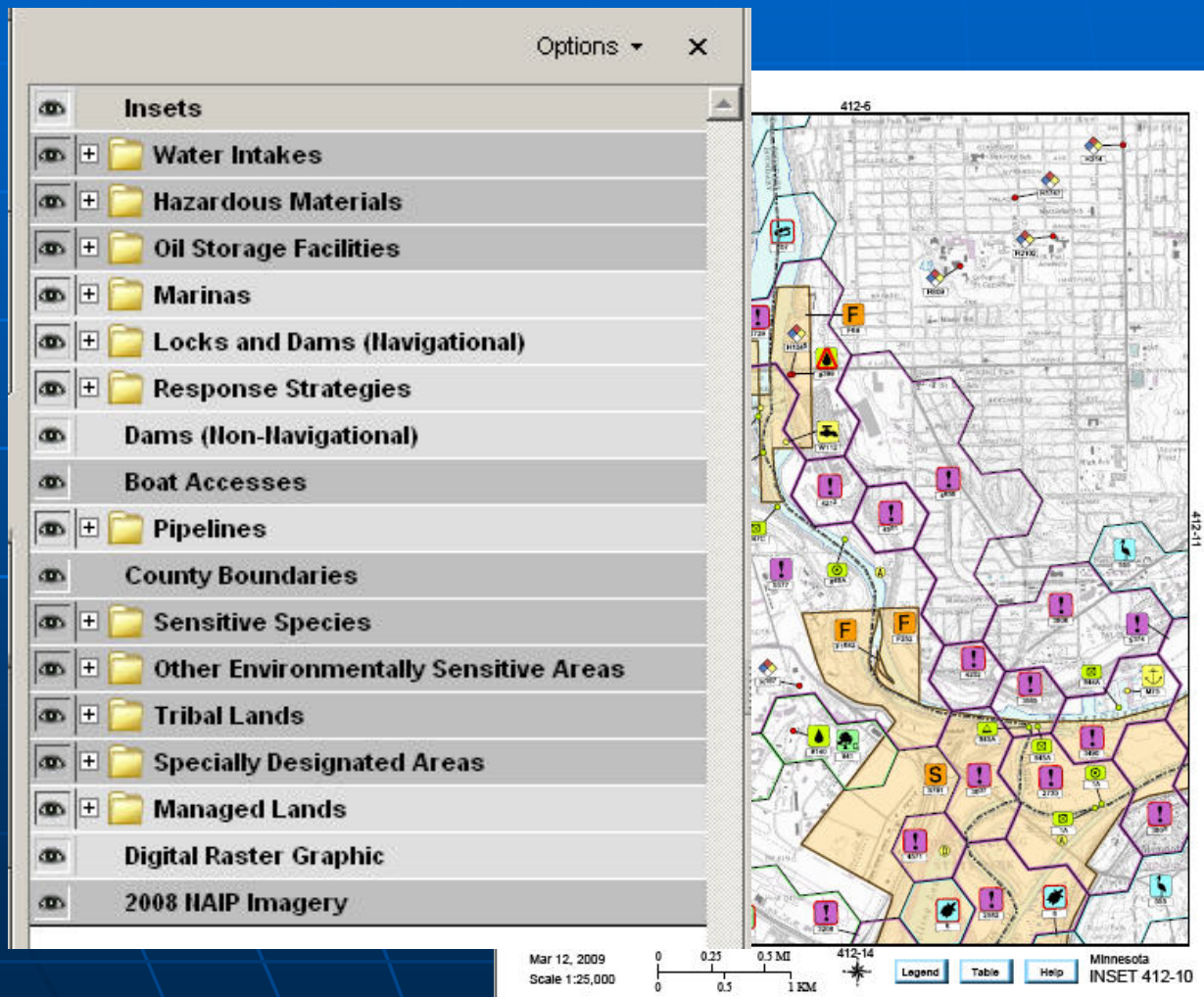


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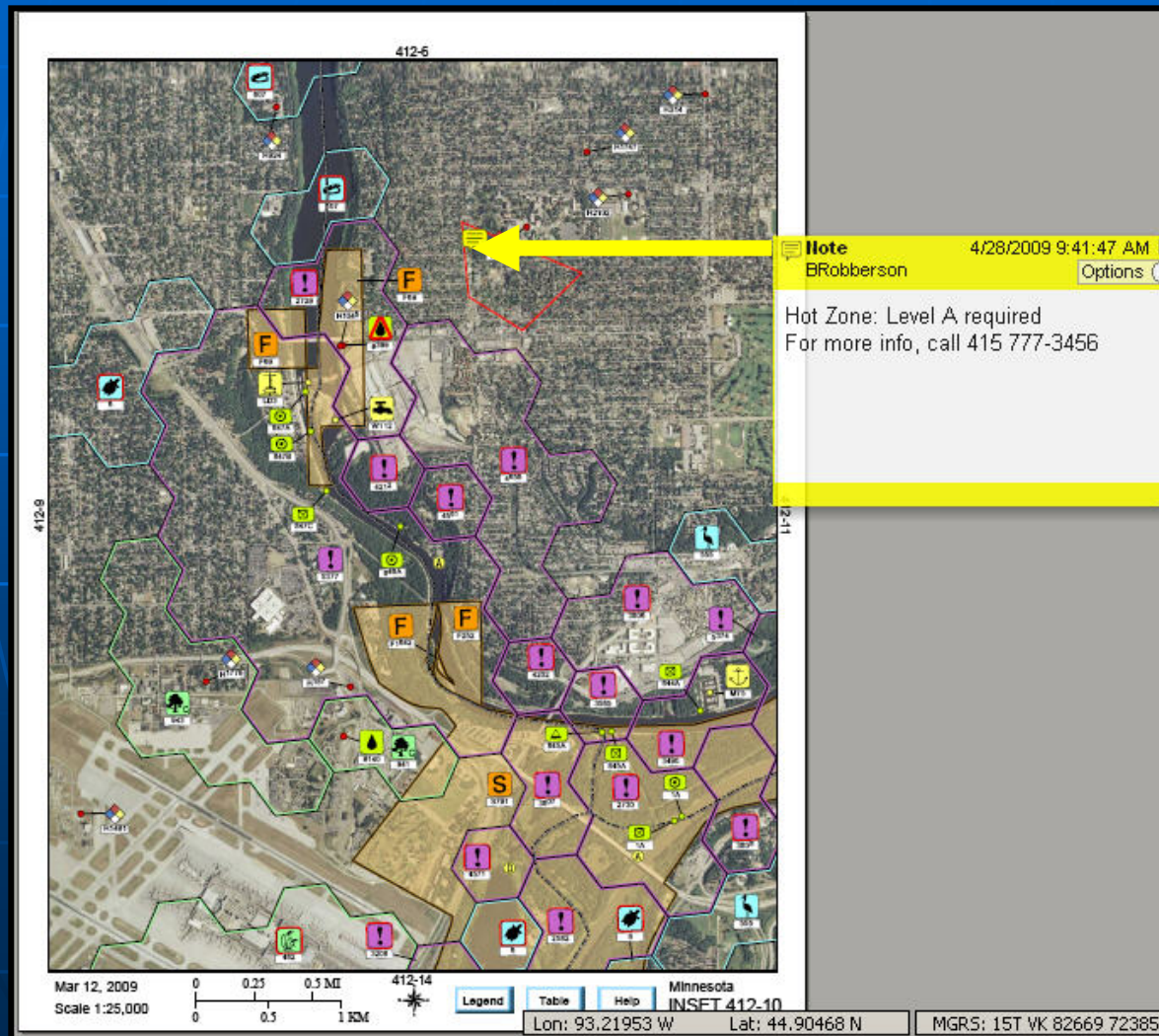
The screenshot displays the EPA Geopdf software interface. On the left, the 'Object Data' window is open, showing a table of properties for a selected object. The 'Object Grouping' dropdown is set to 'Managed Lands : S791'. The table lists properties such as 'ICON', 'Site Name', 'Managing Agency', 'Category', 'Waterbody', 'Emergency Phone', 'Contact Phone', and 'Comments'. In the background, a map view is visible, showing a geographical area with various colored overlays and labels. The map includes a scale bar (0 to 1 KM), a north arrow, and a date (Mar 12, 2009). The map also shows labels for '2008 HAIP Imagery' and 'INSET 412-10'.

Property	Value
ICON	S791
Site Name	Fort Snelling
Managing Agency	MN DNR, Parks & Recreation
Category	State Park
Waterbody	Minnesota and Mississippi Rivers; Gun...
Emergency Phone	651-649-5451
Contact Phone	612-725-2389
Comments	Consists of river bottoms forested wi...

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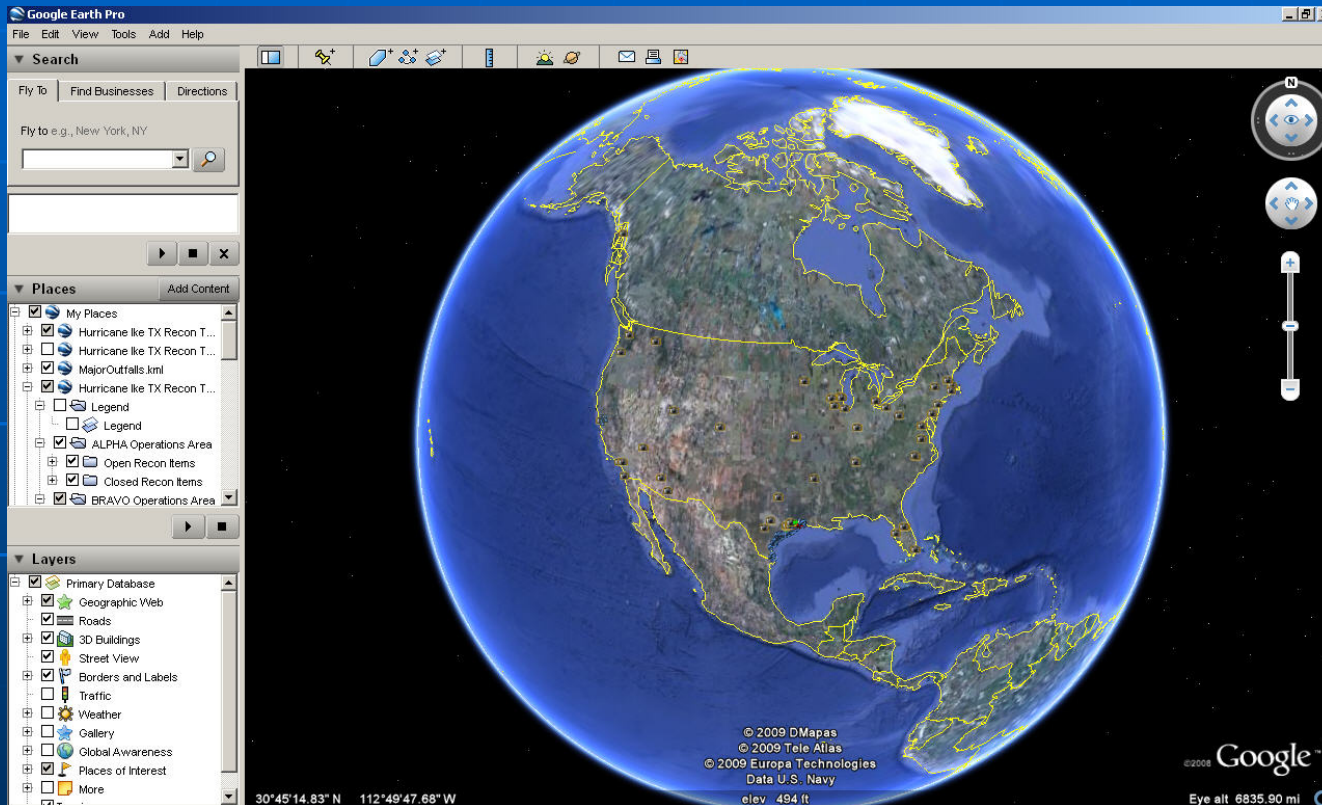
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EPA Web-Based Mapping Tools include the following...

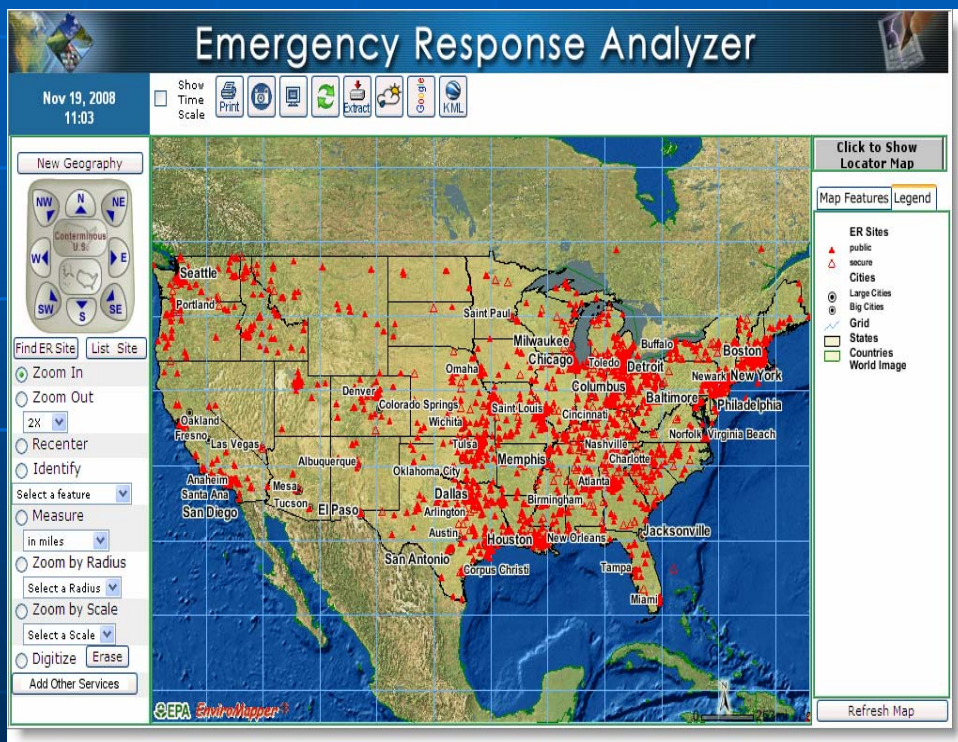
..

Google
Earth Pro

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Emergency Response Analyzer



- <http://intramap28.rtpnc.epa.gov/era/em4er.asp>
- Secure, internal application
- Enables EPA Headquarters EOC or Regional EOCs to quickly visualize impacts from environmental emergency situations like chemical or oil spills, chemical plant fires or explosions or other events
- ERA also supports analysis of the effects of the emergency situation on vulnerable populations or environmental resources.

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Clean Air Mapping and Analysis Program

- <http://134.67.99.133/cmap/viewer.htm>
- Viewer
- Environmental protection is inherently geographic in nature. The Clean Air Markets Division is using geographic data to assess the environmental effectiveness of the Acid Rain Program. C-MAP is a Geographic Information System (GIS) assessment tool being used to better understand and characterize the benefits of national and regional pollutant emission reduction programs. C-MAP consists of two primary areas: the Map Gallery and GIS Data Download.

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Cleanups in My Community

- <http://iaspub.epa.gov/Cleanups/>
- Cleanups in My Community is a mapping and listing tool that shows sites where pollution is being or has been cleaned up throughout the United States. It maps, lists and provides cleanup progress profiles for: Sites, facilities and properties that have been contaminated by hazardous materials and are being, or have been, cleaned up under EPA's Superfund, RCRA and/or Brownfields cleanup programs. Federal facilities that have been contaminated by hazardous materials and are being, or have been, cleaned up under EPA's Superfund and/or RCRA cleanup programs.

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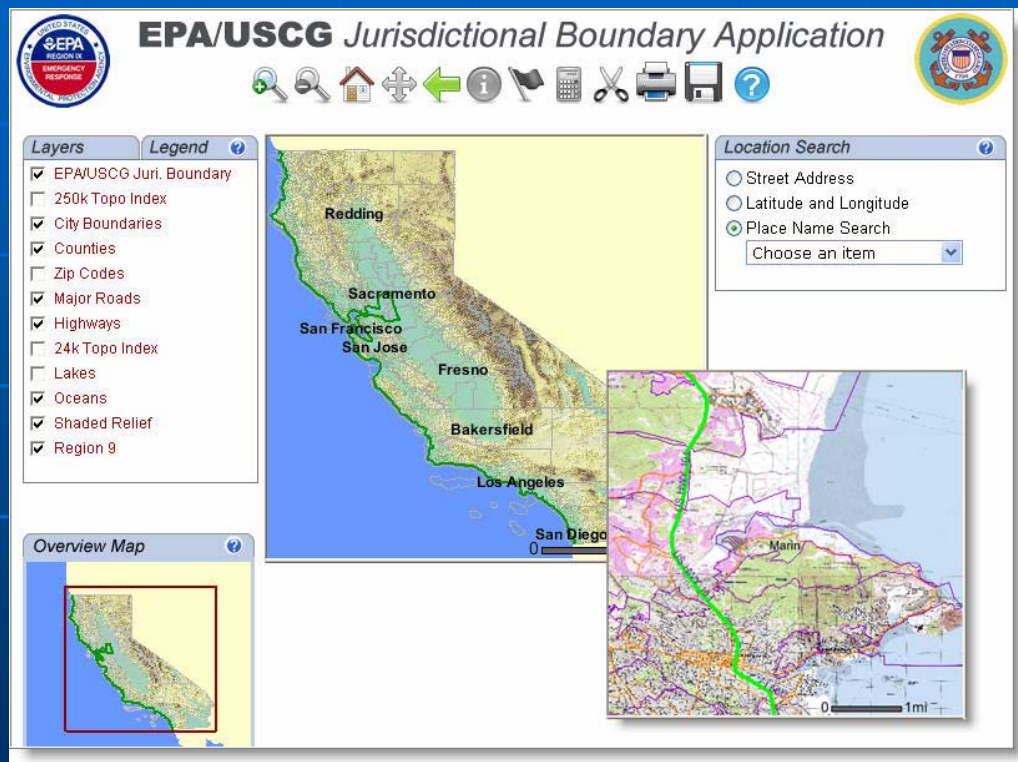


Tribal Windows to the Environment

The screenshot shows the "Tribal Windows to the Environment" web application. At the top, it says "U.S. ENVIRONMENTAL PROTECTION AGENCY" and "Tribal Windows to the Environment". Below this is a navigation bar with links: "Contact Us | Online Help | Search: [input field] [GO]". A breadcrumb trail reads "EPA Home > EnviroMapper > Tribal Windows to the Environment". The main content area is divided into two panels. The left panel shows a map of a city area with various street names and colored overlays representing different environmental features. The right panel is a legend titled "Map Features" with sections for "WREQC layers" (Wind River boundary, Water Monitors, Abandoned Mines), "Tribal features" (AK Native Village, AK Allotments, OK Parcels, Open Dumps, Tribal Land), and "Regulated sites" (Multi-activities, Superfund). Below the map, there are controls for "Zoom In", "Zoom Out", "Identify", "Select", "Recent", "Locator Map", and "Legend". The bottom panel is titled "Tribal Windows to the Environment" and contains instructions for selecting a tribe by region or state. It includes a "Recent Addresses | Contact Us | Print Version" link, a "Tribal Management System" icon, and a "You can select a tribe by EPA region or by state." section. The "By Region" section has radio buttons for "Region" and "State", and a "Reset Page" button. The "By State" section has a "State" radio button and a "Reset Page" button. Below these are two maps of the United States, one showing regions and one showing states, with numbered regions and states. At the bottom, there is a "Select a tribe from the following menu:" dropdown menu showing "Absentee-Shawnee Tribe of Indians of Oklahoma" and buttons for "Retrieve Tribal Information" and "Reset".

- <http://epamap18.epa.gov/tri be/emtribes.asp>
- The Tribal Windows to the Environment (TWE) system was developed for EPA's American Indian Environmental Office (AIEO). TWE identifies and maps the major facilities regulated by, or of environmental interest to, EPA and other federal agencies that lie within the boundaries of a tribe. TWE may be used to launch a wider query and data extraction from Envirofacts, EPA's data warehouse of integrated environmental information.

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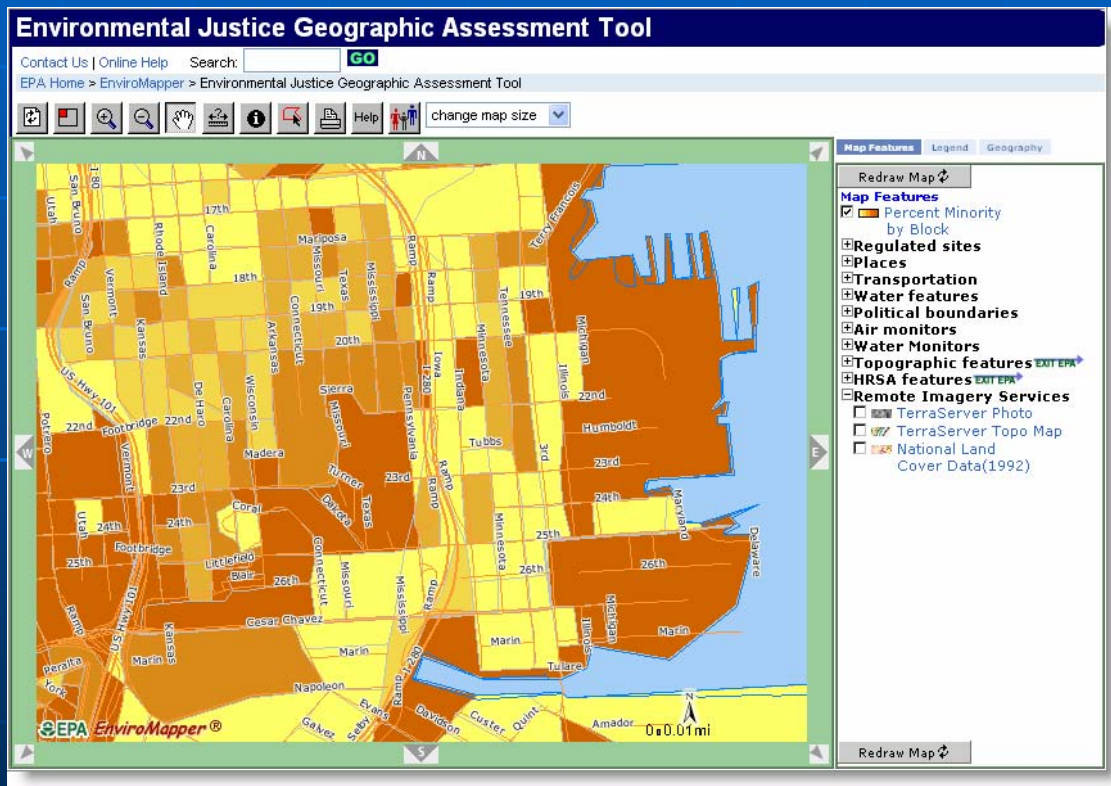
EPA/USCG Jurisdictional Boundary Application

- <http://epamap35.epa.gov/jba/viewer.htm>
- Developed by the Region 9 GIS Center, this application displays the jurisdictional boundary between the EPA and USCG. This tool allows easy searching for places throughout Region 9 and is often used for basic orientation. A useful addition to this application is that it contains every USGS topographic quad map at scales of 1:24,000, 1:100,000 and 1:250,000.

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Environmental Justice Assessment Tool



- <http://intramap13.rtpnc.epa.gov/ej/emej.asp>
- The Environmental Justice Geographic Assessment Tool, provides information for preliminary analysis of Environmental Justice areas of concern. Assessment variables include demographics, such as persons per square mile, per capita income, and percent below the poverty line. The EJ Assessment tool provides the ability to review these assessment variables and others with respect to several types of regulated facilities.

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Window To My Environment

The screenshot shows the WME web application interface. At the top, there is a large image of a map of the United States with a small inset showing a collage of environmental images (a plant, a factory, a person, and a landscape) with the text "Window to My Environment" overlaid. Below this, there are two tabs: "By Zip or City" (selected) and "By Latitude/Longitude". Under the "By Zip or City" tab, there is a form with the following fields: "ZIP Code:" followed by a text input box, "OR" followed by another text input box, "City/Town:" followed by a text input box, and "AND State:" followed by a dropdown menu labeled "Choose One". At the bottom of the form are two buttons: "Create My Window" and "Clear Form". To the right of the form, there is a text box that says: "After choosing your location to the left, WME will provide the following:" followed by a bulleted list of features: "Interactive Map", "Your Window", and "Your Environment". At the bottom of the text box, there is a paragraph that says: "We would like to know what you think of the information presented here and what additional issues you would like to see addressed. To provide information or links, send an email to Enviromail_Group@epamail.epa.gov."

After choosing your location to the left, WME will provide the following:

- **Interactive Map** - shows the location of regulated facilities, monitoring sites, water bodies, population density, perspective topographic views and so much more with hotlinks to state/federal information about these items of interest.
- **Your Window** - provides selected geographic statistics about your area of interest, including estimated population, county/urban area designations, local watersheds/waterbodies, etc.
- **Your Environment** - links to information from federal, state, and local partners on environmental issues like air and water quality, watershed health, Superfund sites, fish advisories, impaired waters, as well as local services working to protect the environment in your area.

We would like to know what you think of the information presented here and what additional issues you would like to see addressed. To provide information or links, send an email to Enviromail_Group@epamail.epa.gov.

- <http://www.epa.gov/enviro/wme/>
- "Window To My Environment" (WME) is a powerful web-based tool that provides a wide range of federal, state, and local information about environmental conditions and features in an area of your choice. This application is provided by U.S. EPA in partnership with federal, state and local government and other organizations.

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OTIS Online Tracking Information System

Since 1999, the premier environmental enforcement and compliance analysis and reporting resource for government agencies

→ Compliance and Enforcement

Multimedia Clean Air Act Clean Water Act RCRA Federal Cases Watch List State Framework Home

OTIS Google Maps- Multimedia Map

? Help

- To zoom in, double click the left mouse button, or move the sliding scale up (located on the left side of the map).
- To zoom out, double click the right mouse button, or move the sliding scale down (located on the left side of the map).
- To move north, south, east, or west, drag the map up, down, right, or left, respectively.
- To map all facilities within the map extent, click the green "Show All Facilities" button. You may have to zoom far into a densely populated area in order to fit 500 facilities in the map view.
- Selecting the Multimedia, CAA, CWA, or RCRA radio button, and then clicking the "Show All Facilities" button will map only facilities in the selected media.
- For details on accessing a facility map from an OTIS results table, view the OTIS Google Maps [help](#) file.
- If you begin your facility search using OTIS Google Maps, only those facilities with locational information in IDEA will be plotted on the map and listed in the corresponding chart. To obtain information on all facilities that are regulated under CAA, CWA and RCRA, please perform a [facility search](#).

☐ Multimedia ☒ CAA ☐ RCRA ☐ CWA-PCS ☐ CWA-ICP

SHOW ALL FACILITIES

Online Tracking Information System (OTIS) Google Maps Tool

- <http://www.epa-otis.gov/otis/otismaps.html?tool=caa>
- An environmental enforcement and compliance analysis and reporting resource for government agencies

The Brave New 'Digital' World of Area Planning - EPA tools and resources



A cross-agency U.S. Government Web site. [List of AIRNow partner agencies](#) [About AIRNow](#) [Contact Us](#) [FAQs](#) [Search:](#) [GO](#)

AIRNOW Quality of Air Means Quality of Life

National Overview November 18th, 2008

National Outlook for November 18-19
Unhealthy for Sensitive Groups AQI Levels in California — [More](#) —

Air Quality Outlook November 18-19, 2008

[National Forecast](#) | [Ozone Now](#) | [Particles Now](#) | [Map Center](#)

Local Air Quality Conditions and Forecasts

Alabama [GO](#) [Select by map](#)

Today's Highest AQI Forecasts

Location	AQI
Bakersfield, CA	PM2.5
Central Coastal, CA	PM2.5
Central LA CO, CA	PM2.5
Central Orange-1, CA	PM2.5
Central Orange-2, CA	PM2.5

— [More](#) —

Note: EPA established a tighter fine particle [standard](#) in the fall of 2006 to better protect public health. — [More Information](#) —

Air Quality News

California Fires: Air Quality Forecast to Be Unhealthy for Sensitive Groups Across Much of Southland
Areas directly impacted by smoke from the ongoing Sayre and Freeway/Triangle Complex fires will experience Unhealthy air quality. -- Release Date: 11/17/2008 — [More](#) — [EXIT AIRNOW](#) —

— [More News](#) —

Partners
For Partners
List of Partners

Air Quality Basics
Air Quality Index
Ozone
Particles
UV

The AQI for:
[Health Providers](#)
[Older Adults](#)
[Weathercasters](#)

Key Topics
[Your Health](#)
Smoke From Fires
International Air Quality

The Learning Center
[Kids \(K-10\)](#)
[Students](#)
[Teachers](#)

Resources
AQI in Google Earth
Publications
Publications (En Español)
FAQ
Movies
What You Can Do
NAQ Conferences
About the Data

Accessibility
Privacy and Security

E-mail Notification
[EnviroFlash](#) Sign-up for e-mail, cell phone or pager air quality notices

Historical Information
[Air Compare](#)
Compare Air Quality of U.S. Cities

Announcements

Save the Date! March 2-5, 2009
2009 National Air Quality Conferences

Air Quality Health Advisories
National Parks
National Weather Service

Web Cams [EXIT AIRNOW](#)

[Visibility in Des Moines, IA](#)
[View Other Visibility Cams](#)

Air Quality Index (AQI) – AIRNOW

- <http://airnow.gov/>
- AIRNOW provides the Air Quality Index (AQI) forecasts as well as real-time AQI conditions for over 300 cities across the US. Also, the application provides links to more detailed state and local air quality Web sites.

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EnviroMapper for Envirofacts

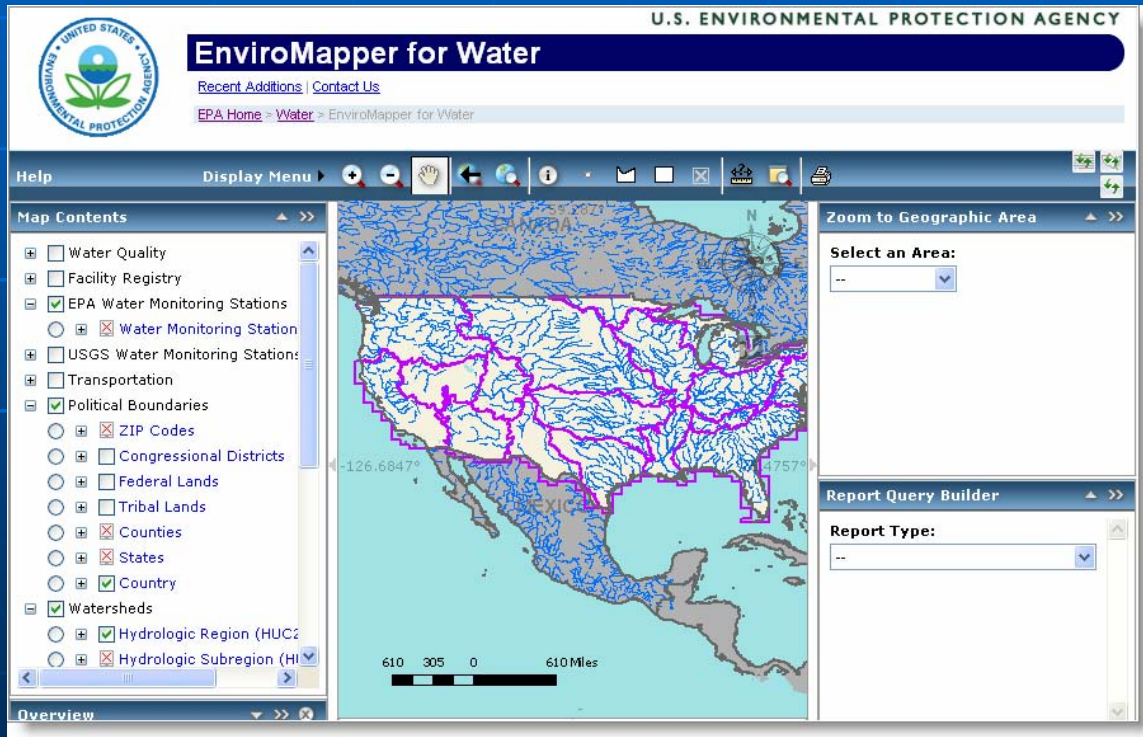


- <http://www.epa.gov/enviro/emef/>
- The EnviroMapper for Envirofacts tool combines interactive maps and aerial photography to display facility-based information from the Envirofacts Warehouse.
- There are now six geographically based selection options to help you zoom into areas of interest. Each option essentially does the same thing, offering maps and aerial photos that can be used to locate EPA regulated facilities. However, two options, "By Address" and "By Facility" have the potential to zoom to a point closer to or exactly on your facility.

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EnviroMapper for Water



- <http://map24.epa.gov/emr/>
- EnviroMapper for Water is a web-based Geographic Information System (GIS) application that dynamically displays water quality and other environmental information about bodies of water in the United States. This interactive tool allows you to create customized maps that portray the nation's surface waters along with a collection of water quality related data from the national level down to community level.

QUESTIONS

